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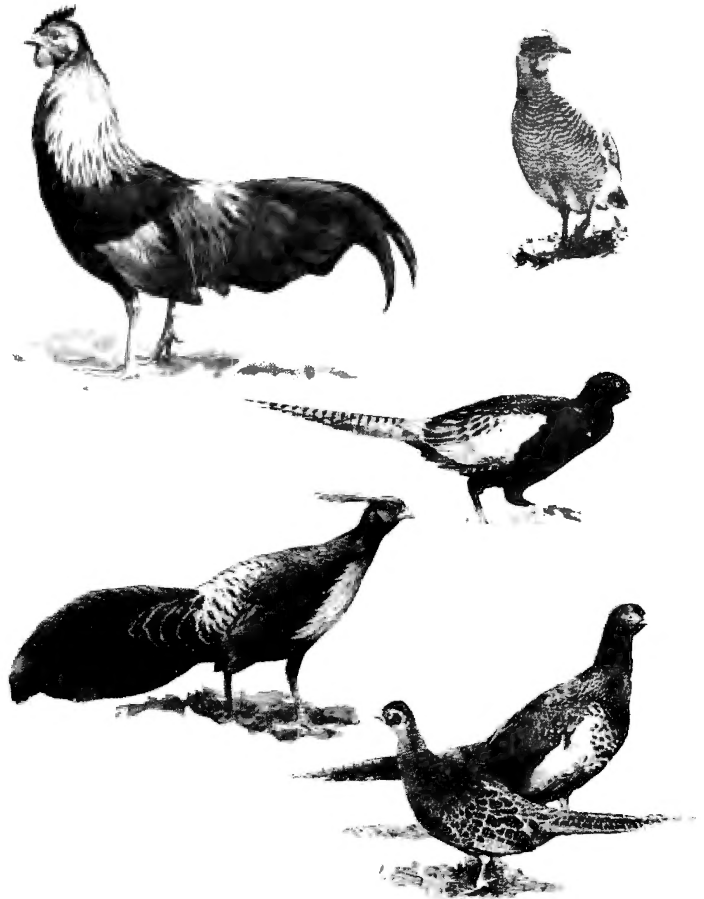
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SUMMARY OF FOREIGN GAME BIRD PROPAGATION AND LIBERATIONS 1960 to 1963

Black Francolin
Gray Francolin
Bamboo Partridge
Red-Legged Partridge
Turkish Chukar
Seesee Partridge
Sand-Grouse
Red Junglefowl
Iranian Pheasants
Japanese Green Pheasant
Korean Pheasant
Afghan Pheasant
Kalij Pheasant
Reeves Pheasant
Himalayan Snowcock



UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

Special Scientific Report--Wildlife No. 80

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**SUMMARY OF FOREIGN GAME BIRD
PROPAGATION AND LIBERATIONS
1960 to 1963**

By

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UNITED STATES DEPARTMENT OF THE INTERIOR

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THE FOREIGN GAME INTRODUCTION PROGRAM

Year by year the number of individuals seeking relaxation through hunting is increasing. Yet the area available for this sport is slowly decreasing. Likewise, much of the habitat which mothers the game crop is becoming less and less capable of producing shootable surpluses under the impact of clean farming, over-grazing, drainage, power equipment, increased use of insecticides and herbicides, scientific forestry, urbanization, and declining soil fertility.

Faced with this situation, common sense dictates an all-out effort to increase habitat productivity. But there are many habitats which have been so thoroughly changed by man that native game species can no longer maintain themselves therein in numbers sufficient to provide good hunting. Competing interests and the cost of reversing this trend are such that only a part of these lands can be restored to reasonable productivity in the foreseeable future. There are other coverts which never were fully occupied by native game birds or mammals possessing the characteristics requisite to survival in the face of today's intensive hunting pressure. For these, new, adaptable species possessing a high hunting resistance should be sought so that such areas might provide hunting opportunities greater than are now possible. This is the logic behind the foreign game introduction program as developed by the Bureau of Sport Fisheries and Wildlife and its predecessor, the Fish and Wildlife Service, and cooperating State Fish and Game Commissions.

The program is based on requests for assistance from State Commissions following a detailed ecological appraisal of their game-deficient habitats. After analyzing these, biologists are assigned to make a careful study of game species occupying similar habitat and climatic niches in foreign countries. From dozens considered, one or two may then be selected on the basis of their characteristics, habits, reproductive capacity, resistance to predation and disease, relationship to agriculture, ability to withstand heavy hunting pressure, and the possibility of competition with game species native to the United States. Modest, carefully-planned trial introductions of these species, utilizing wild-trapped individuals, carefully quarantined before shipment are then carried out in cooperation with interested State Fish and Game Commissions. Unplanned or "hit and miss" introductions are actively discouraged.

ABSTRACT

State reports covering the propagation and trial liberation of foreign game birds are summarized for the period 1960 through 1963. Details are then provided in tabular form. Of the 21 species and subspecies and 6 crosses reported, only the sandgrouse and the Himalayan snowcock have not yet been produced in numbers in captivity. Increasing consideration is being given to the production of well-reared birds conditioned for survival in the wild following release. In all, 78,217 individuals, mostly pheasants, are reported to have been raised for trial liberation from breeders provided through the Foreign Game Introduction Program. These releases supplement 16,145 birds wild-trapped and sent to cooperating States for trial release.

While, for most species under trial, it is still too early to evaluate results, some are evident. Iranian pheasants, black francolin and gray francolin have demonstrated an ability to survive, reproduce and increase substantially on release areas. Conversely Indian sandgrouse and two other species have probably failed to adapt themselves and the semi-domestic strain of Reeve's pheasant is barely hanging on. Six other species are maintaining themselves in numbers sufficient to justify guarded optimism.

SUMMARY OF FOREIGN GAME BIRD PROPAGATION AND LIBERATIONS

1960 to 1963

Periodic situation reports are an integral part of any well run research program. Partial reports have been issued from time to time, but with Program personnel generally overseas, it has been difficult to keep track of progress on a countrywide basis.

Program acceptance has been substantial. Cooperative agreements with 45 of the 50 States and with 2 Territories have been signed. Ecological appraisals of problem habitats, prepared by most of these States, cover about 1/5 of the United States. Currently 25 States and Guam are actively rearing and/or testing out foreign species procured through the Foreign Game Introduction Program.

Considerable progress in securing birds sufficient to permit sound trial liberations has been made. Over the period covered by this report 16,145 wild-trapped birds have been delivered to States requesting them for trial release or for breeding stock on State game farms. From the breeders thus provided 78,217 individuals are reported to have been raised, over the past 4 years, to supplement existing releases of wild-trapped stock or to provide additional birds for fresh trials. The majority of these were pheasants.

It is now appropriate to review what is happening to the birds released and to look into the program of raising additional birds on State game farms. To further this objective, Program personnel, under the guidance of State biologists and farm foremen, have made repeated on-the-spot inspections of most of the areas or farms on which foreign species have been liberated or are being propagated. In addition, cooperating States were requested to fill out a questionnaire covering a brief summary of activities and results for the period 1960-1962. This analysis was condensed and issued as Progress Report Number 12. The present Report carries these operations through 1963. To facilitate comparison and preserve continuity most records of previous years operations are repeated in the present tabular presentation. Included also, for the record, are reports on four species, subspecies or crosses of foreign game birds with which various States have been experimenting on their own and for whom the parent stock was not secured under the State-Federal Foreign Game Introduction Program.

RELEASES AND RESULTS

Trial liberations of 16 species or subspecies and of 5 pheasant crosses are currently underway in 23 States and Guam. Twelve of these occupy farm and adjacent brush or waste lands. Ten of the twelve are pheasants. Six are potentially adaptable to range and dry or irrigated farmlands; three are woodland species. Areas in which these are being tried lie in the central, southern, southwestern and far western States.

Release areas were, by necessity, selected mostly by State biologists, largely from photographs and written descriptions of habitat, climate and other conditions existing within the native range of a species. Selections varied from completely suitable to unsuitable, so Program biologists are now attempting to evaluate each new area in advance.

The numbers of birds released on an area have varied from 11 to over 1000 birds a year. Follow-up releases of additional birds on the same area have been all too few, thus impairing the chances of successful establishment.

Although it is generally believed that wild-trapped birds liberated by the gentle-release method will wander less, the records here presented shed little light on this point. Indian sandgrouse, gray francolin, chukars and the ring-necked pheasant group are apt to wander widely following release; black francolin normally spread out slowly from the point of liberation.

When the Program was started some biologists expressed fear that foreign species, if successful, might adversely affect native game birds. State biologists have been alert to this possibility, but no evidence has been reported to date to substantiate this view.

In the current year the Nevada Commission liberated the Himalayan snowcock. No other new birds, or wild-trapped individuals of species already under trial, have been released. State game farms have been remarkably successful in producing most of the species recommended for trial, in numbers sufficient to continue releases where required. In 1963, 25 States liberated 23,958 farm raised individuals of 19 species, mostly to supplement releases previously undertaken.

Current Status of State Releases by Species

While, for most species under trial, it is still too early to evaluate results, some are evident. Iranian pheasants, black francolin, and gray francolin have definitely demonstrated an ability to survive, reproduce and increase substantially on a number of release areas. Conversely Indian sandgrouse have disappeared and Reeve's pheasants, though tried in substantial numbers in several States, are barely hanging on. Six other species are maintaining themselves in numbers sufficient to justify guarded optimism and two others have probably failed.

The coturnix quail, liberated in very large numbers between 1956 and 1961 by many States, apparently failed to take. It was not recommended for trial by the Foreign Game Introduction Program and is not considered further in this report.

The current status, by species, may be summarized as follows:

Black francolin - Apparently established in Louisiana and showing promise in South Carolina, Florida, New Mexico, Hawaii and Guam.

Gray francolin - Apparently established in Hawaii and showing promise in Guam, Nevada and possibly Texas.

Bamboo partridge - Only a few small liberations made to date. Results inconclusive but not particularly encouraging.

Red-legged partridge - Considerable evidence of survival in eastern Washington; results elsewhere inconclusive.

Turkish chukar - Increasing in several areas in California and possibly northwestern New Mexico; merged with Indian chukars in Utah and apparently failed to take elsewhere.

Barbary partridge - Marginal survival in California and Hawaii to date. Not introduced under the F.G.I.P.

Seesee partridge - Only two small liberations to date. No reproduction observed.

Indian sandgrouse - No recent reports of birds either in Nevada or Hawaii, the only two States in which they were introduced.

Red junglefowl - The first release in Oklahoma in 1962 scattered widely without observed reproduction. Small numbers liberated in four States in 1963.

Western Iranian pheasant - Highly successful in Virginia where pheasants have been reported from over 40 counties. On one Kentucky release area 57 broods reported in 1963. Survival and reproduction indicated in South Carolina, Florida, Alabama, Tennessee and Arkansas. Decreasing in Missouri. Temperatures in the native range of the Iranian pheasant vary from 95°F in summer to 25°F in winter. These pheasants have been extensively crossed with northern ringnecks in captivity in hopes of securing a bird possessing good survival south of the ringneck range and north of the Gulf States where temperatures approximate those of the Iranian's native range.

Eastern Iranian pheasant - Good survival and reproduction noted in Missouri and Iowa but showing much less promise in Virginia, Kentucky and Tennessee than is the western Iranian subspecies.

Japanese Green pheasant - Maintaining fair to good abundance in eastern Virginia and reproducing in Tennessee. Results elsewhere inconclusive with some failure reported. This species successfully introduced into Hawaii some years ago.

Korean pheasant - Reproduction noted in Pennsylvania. All other releases made in 1963.

Afghan white-winged pheasant - Good reproduction in Oklahoma. In Missouri 66 broods reported on one liberation area.

Kalij pheasant - First release in 1963, in Virginia. One brood reported.

Reeve's pheasant - Maintaining itself in Hawaii. Disappeared in Arkansas. From large numbers released in Ohio and Kentucky only a few groups of birds are currently reported. The breeders from which this stock was raised were obtained from private game farms not connected with the F.G.I.P. Recently wild-trapped stock has been secured and is being successfully propagated.

Elliot's pheasant - Released, apparently without success in Ohio. Not introduced under the F.G.I.P.

Erkel's francolin - Maintaining small numbers in Hawaii. Releases made by private individuals in California are said to have failed. Not introduced under the F.G.I.P.

Himalayan snowcock - First released in Nevada in 1963. Not introduced under the F.G.I.P.

ADAPTABILITY OF SPECIES TO COVER TYPES AND GEOGRAPHIC AREAS

In considering releases and in planning future trials it might be helpful to list again for ready reference the predominant cover favored by various species in their native range and the principal regions of the United States to which they might be climatically adapted.

Predominant Cover Favored by Various Species

<u>Cultivated lands</u>	<u>Woodlands</u>	<u>Dry, cultivated areas and grassy-weedy ranges</u>
black francolin	red junglefowl	gray francolin
bamboo partridge	kalij pheasant	red-legged partridge
Iranian pheasant	Reeve's pheasant	Turkish chukar
Japanese green pheasant		seesee partridge
Korean pheasant		Afghan pheasant

Principal Areas of Climatic Adaptability of Various Species

Mid-Atlantic

Korean pheasant
Western Iranian pheasant crosses
Japanese green pheasant
White-crested kalij pheasant
Reeve's pheasant

Southeast

Black francolin
Bamboo partridge
Red junglefowl
Western Iranian pheasant
Japanese green pheasant
White-crested kalij pheasant

Midwest

Korean pheasant
Iranian pheasant crosses
Japanese green pheasant
Reeve's pheasant

Rocky Mountains

Turkish chukar
Seesee partridge
Korean pheasant
Afghan white-winged pheasant
White-crested kalij pheasant
Reeve's pheasant

Southwest

Black francolin
Gray francolin
Red-legged partridge
Turkish chukar
Seesee partridge
Red junglefowl
Afghan white-winged pheasant
Eastern Iranian pheasant
White-crested kalij pheasant

Pacific

Black francolin
Bamboo partridge
Red-legged partridge
Turkish chukar
Seesee partridge
Red junglefowl
Korean pheasant
Afghan white-winged pheasant
Japanese green pheasant
White-crested kalij pheasant
Reeve's pheasant

PROPAGATION OF FOREIGN GAME BIRDS BY SPECIES

Many biologists believe that State game farms have outlived their usefulness. If so the current Program has returned to them their historical reason for existence. Without them it is probable that the successful acclimatization of the pheasant and the chukar would have been long-delayed.

Most foreign countries will not permit the exportation of native species in numbers needed to complete satisfactory trials in the United States. The only alternative is to rear thrifty birds, adequately conditioned for survival in the wild, in numbers sufficient to supplement these trials.

Realizing this, 25 States are now utilizing breeding stock secured through the Foreign Game Introduction Program to produce additional birds for trial release. Ten of these are now devoting their game rearing facilities exclusively to the production of foreign game species. The list includes two francolins, five partridges, seven pheasants and two kinds of sandgrouse. All except the last named are currently being raised in fair to substantial numbers on State farms. In fact, over the past four years 99,796 foreign game birds are reported as reared on the State game farms. Most of these are pheasants. Overall about three-quarters of the birds raised were from breeding stock provided by the F.G.I.P. In 1963, 23,939 individuals representing 15 species or subspecies were produced for trial release.

These farms can provide the birds required to complete the trials begun with wild-trapped stock. But unless vigorous individuals, well-conditioned for survival in the wild, are produced the farms also could seriously impede progress through the production of substandard stock. In some instances this is exactly what is happening. For this reason Program personnel have had to maintain frequent contacts with State biologists and with the men rearing the birds, to offer technical assistance and advice. This service has been well-accepted and is resulting in a substantial improvement both in the numbers of birds produced and in the quality of the stock available for trial.

Current Status of Attempts to Propagate Foreign Species

As in most other fields, communication is our biggest problem. Some States have been highly successful in breeding a given species, others have failed to rear more than a few birds, have been puzzled by their lack of success, and have not known where to turn for assistance. The reasons for these differences are oftentimes discernible if one compares practices and results State by State. Therefore, in addition to periodic service contacts with cooperating States by Program personnel, a record of breeding and rearing activities by species, States and years has been assembled. This shows at a glance, some of the propagation techniques being utilized and the degree of success achieved with each species. It also helps to pinpoint some of the probable areas or causes of failure which might be corrected with the proper technical assistance.

Progress by species, with particular reference to results obtained in 1963 may be summarized as follows:

Black Francolin - Thirteen game farms in 11 States reared 1025 birds in 1963. About half of these were produced by the Virginia game farm. The species is not difficult to propagate. Major problems are egg production and getting newly hatched chicks to start eating.

Gray Francolin - Five States raised 1082 birds. Three-quarters of these were reared on the Texas game farm, on which production was a remarkable 37 eggs per hen. Overall, 93 percent of the chicks hatched were reared.

Bamboo Partridge - Seven States produced 1263 birds. Low egg fertility continues to be the major problem with this species.

Red-legged Partridge - Among the 6 States that raised a total of 5223 birds, the production at the Washington, California, and Texas State game farms was outstanding. The red-legged partridge from France is easy to propagate. Little progress has been made in securing satisfactory egg production from the Spanish subspecies.

Seesee Partridge - There was no record of this species being raised in captivity until Oklahoma succeeded in 1960. In 1963, this State and Utah produced 107 birds. Egg fertility was fairly good; chick survival excellent. Egg production has been low but is improving.

Turkish Chukar Partridge - Large numbers of this species have been reared by New Mexico since 1959. In 1963, 2 States raised 1693 birds.

Greek Chukar Partridge - From wild stock, recently secured, California reared 183 individuals.

Barbary Partridge - California, the only State working with this species, produced 1254 birds in 1963. The record indicates that no particular problems were encountered. Brood stock was secured from private game farms.

Common Indian and Imperial Sandgrouse - Utah has been experimenting with a few of each species since 1961. Only one egg has been produced to date.

Red Junglefowl - In an attempt to locate a woodland species potentially adaptable to the Southeast, 9 States, currently working with this species, reared 1416 birds. Junglefowl seemingly adapt well to captivity and are easy to propagate in numbers.

Western Iranian Pheasant - Both this and the eastern Iranian pheasant reproduce well in captivity. When crossed with the northern ringneck, production is markedly increased. This year 6 States reared 1960 pure strain birds and 4602 crosses. No special techniques are required.

Eastern Iranian Pheasant - The fact that this subspecies is somewhat easier to propagate than is its western relative has encouraged its rearing by many States. In the current year 4 States produced 2512 pure strain birds; 6 raised 2667 individuals that were crossed with the northern ringneck.

Japanese Green Pheasant - This subspecies adapts itself very well to propagation in captivity. No problems were reported by 5 States in producing 2619 birds this year. That it crosses easily with the northern ringneck in captivity was demonstrated by the production of 1236 such hybrids by Tennessee in 1963. They also found evidence that this subspecies may breed 2 to 3 weeks later in captivity than does the ringneck.

Korean Ringneck Pheasant - First produced in fair numbers in Missouri and Pennsylvania in 1962. Four northern States reared 3522 birds this year thus providing numbers adequate for more substantial trials in 1963. No difficulty in propagation indicated.

Afghan White-winged Pheasant - After a slow start this species is now responding well to game farm propagation. Four States produced 3254 birds in 1963 with New Mexico far in the lead.

Kalij Pheasant - Three States have found this species relatively productive in captivity. In 1963, from a small breeding stock 382 individuals were reared.

Reeve's Pheasant - Many States have demonstrated the possibility of rearing large numbers of this species from breeding stock that have endured many generations in captivity. The survival of such birds in the wild has been so poor that game farm production has been decreased materially with but 3 States producing 1911 birds this year. Problems associated with breeding wild-trapped birds, secured in France are being gradually resolved by Tennessee and Missouri, with the production of 115 birds in 1963.

Reviewing this record it is evident that State game farms are capable of producing many foreign species in quantities required to permit adequate tests of their adaptability to game habitats in the United States. In terms of quality and survival potential following release, there is great variation among the birds reared on State game farms. While hand-reared birds are not considered to be the equal of wild-trapped individuals for test purposes, it is entirely possible to produce reasonably suitable stock in captivity. Encouraging progress in this project can be reported.

A more detailed record of propagation techniques and results by species and States for 1960-1963 is presented in Table 2.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Black francolin (<u>Francolinus</u> <u>francolinus</u> <u>asiae</u>)	Alabama	1960	109	wild	direct	November	Autauga County	Poor
		1962	138	"	"	February	Henry County	Not reported
		1962	65	farm	"	March	" "	Not reported
		1963	91	"	"	May, Sept.	Limestone County	Few seen
	Arkansas	1960	140	wild	gentle	Spring	Wattensaw G.M.A.	One brood reported. Few birds seen.
		1960	86	"	"	"	Camp Robinson	No birds reported after Feb. 1961.
		1963	66	farm	direct	April	Big Lake Area	Dispersed up to 7 miles.
		1963	28	"	"	"	Wattensaw G.M.A.	Dispersed. No broods reported.
	Florida	1961	40	wild	direct	June	Avon Park G.M.A.	Many birds and 1 brood seen.
		1962	70	"	"	February	Avon Park G.M.A.	Many birds seen; 3 broods of 6 to 8 chicks each reported.
		1962	70	"	"	February	Belle Glade	One nest destroyed by fire.
		1963	0	-	-	-	- -	Good survival; 3 mile dispersal.
	Guam	1961	171	"	"	April	Naval Magazine	Birds and broods reported on both areas.
		1961	11	"	gentle	May	Mangilao	Three observed May 1962.
		1963	0					Last seen March 1962.
								Reproduction observed; birds frequently seen within few miles of release site.
	Hawaii	1960	257	wild	gentle	Feb., Sept.	Four islands	Surviving on 4 islands, doubtful on 1. Thirty individuals seen or heard calling on Molokai. For details see FGIP Report #12.
		1962	491	"	"	Jan-Apr.	Three islands	Birds seen on all islands except Lanai, though nowhere are they abundant.
		1963	0					

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Black francolin (cont'd.)	Kentucky	1961	80	wild	direct	June	Henderson County	Seven broods seen in 1961. Dispersed up to 11 miles.
		1962	181	"	"	May	Henderson County	Two nests and 15 broods seen.
		1963	50	farm	"	October	" "	Five broods recorded, totaling 18 chicks. Population declining prior to release of pen-reared birds in fall of 1963.
	Louisiana	1961	152	"	gentle	Mar-Apr	Moorehouse Parish	Many birds and five nests reported. One bird killed 25 miles away.
		1961	110	"	"	Mar-Apr	Gum Cove Area	Many birds and two broods reported. Spread four miles.
		1962	190	"	"	May	Moorehouse Parish	Many birds and five nests located. Ten unbanded males seen. Reproduction good. Calling fre- quently except Sept. through Feb.
		1962	201	"	"	February	Gum Cove Area	Many birds seen and heard. Some without bands.
		1963	0				Both Areas	Number increasing, optimistic of establishment. Birds reported 25 miles from original release site.
	Nevada	1960	235	"	direct	Spring	Moapa-Virgin Valley	Birds and broods reported.
		1961	50	"	"	"	" " "	Four broods observed. Birds holding their own.
		1962	185	"	"	"	" " "	Many adults calling. Breeding indicated. Broods secretive and difficult to observe.
		1962	92	"	"	"	Mason Valley	Reproduction not apparent but steady number of birds still being seen and heard.
		1963	0					

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Black francolin (cont'd.)	New Mexico	1962	262	farm	direct	May	Redrock, Grant County	One brood reported. Dispersion up to 5 miles
		1962	188	"	"	"	Deming, Luna County	Pairing occurred soon after release. One brood seen. Spread up to 7 miles.
		1963	0					Encouraging results with fair reproduction observed.
	Oklahoma	1960	220	wild	direct	April	Blane and Grady Counties	Reproduction. Birds found in tamerack, willow, sunflower and Johnson grass.
		1961	662	"	"	Mar-Apr	" "	Reproduction
		1962	292	"	"	February	Kingfisher, Blane and Grady Co.	Excellent survival. No repro- duction noted. See FGIP progress report #12 for details
		1963	0					Few birds seen in area check-ups.
		1960	92	"	"	August	Belmont G.M.A.	One 2 to 3 weeks old brood seen in November
	South Carolina	1960	30	"	"	April	York County Prison farm	Some still present in 1962.
		1960	88	"	"	August	Santee-Cooper G.M.A.	Reproduction noted.
		1961	52	"	"	April	Belmont G.M.A.	Birds and broods still present in fall 1962.
		1961	52	"	"	April	Santee-Cooper G.M.A.	Birds frequently heard. About 25 to 30 young observed summer of 1962.
		1962	100	"	"	May	Hester farm	Reproduction noted.
		1963	0	-	-	-	-	Broods and adults reported at Santee-Cooper, York and Hester Farm. None seen nor heard at Belmont.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Black francolin (Cont'd.)	Tennessee	1963	76	farm	gentle	October	Dyer County	Too early to tell
	Virginia	1960	48	wild	"	May	Hog Island G.M.A.	Disappeared. One bird reported about 25 miles away in 1962.
		1962	33	farm	"	June	Cumberland forest	Too recent for comment.
		1963	307	"	direct	Apr.Aug., Sept.	Cumberland and Lancaster Cos.	Not known
Gray francolin (<u>Francolinus</u> <u>pondicerianus</u> <u>interpositus</u>)	Guam	1961	145	wild	"	May	N.W.field area	Three broods observed June and July 1962
		1961	30	"	"	"	Anderson AFB	Not reported.
		1961	13	"	"	"	Dept.of Agri- culture area, Mangilao	One brood seen July 1962
		1963	0	-	-	-	-	Reproduction observed. Two broods, 5 and 6 young, and 3 one-third grown young netted with doves June 12 at N.W.Field; one, similar-sized, May 3 at Mangilao. Birds frequently seen within few miles of release site.
	Hawaii	1960	66	wild	gentle	December	Maui	Reproducing on Hawaii and Maui.
		1960	66	"	"	"	Lanai	Seem to be established on Lanai.
		1961	115	"	"	May	Hawaii	Pairing noted January through
		1961	127	"	"	May-Dec.	Maui	May except on Lanai where rearing
		1961	100	"	"	May	Lanai	of young was observed through
		1961	100	"	"	"	Kauai	September. Maximum brood size
		1962	197	"	"	Feb-Mar.	Hawaii	noted was 8. Most birds have re-
		1962	239	"	"	Jan-May	Maui	mained in release area but one
		1962	259	"	"	Jan-Mar.	Lanai	pair noted 14 miles from point of
		1962	160	"	"	Mar-May	Molokai	release. Birds found commonly in
		1962	275	"	"	Mar-Apr	Kauai	three different vegetative zones.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Gray francolin (cont'd.)	Hawaii (cont'd.)	1963	0					Adults and broods reported from all islands except Kauai. Lanai continues most encouraging with average brood size 8.3 young and expansion of range continues. Generally, this species continues to be the most promising import in the State
	Nevada	1959-	1325	wild	direct	winter,	Moapa-Virgin	Nine broods noted 1960-1961. Dispersed several miles. Seven broods confirmed.
		1960				spring	Valley	
		1960-	421	"	"	winter,	Pahranagat	Several broods observed. Birds survived -14°F in winter 1960-61. Reproduction continuing in 1962 sometimes within 2 months of release.
		1961				spring	Valley	
		1959-	250	"	"	winter,	Mason Valley	Continued reproduction noted in Moapa and Mason Valleys. Population appears to be declining in Paharangat Valley, possibly due to lack of diversified agriculture and particularly a lack of cereal crops.
		1961				spring	Mason Valley	
		1961-	262	"	"	spring	Mason Valley	
		1962						
		1963	0	-	-	-	-	
	New Mexico	1962	139	"	"	May	Cliff, Grant County	Two broods reported. Birds seen feeding on greens.
		1962	199	"	"	"	Deming, Luna County	Several broods observed in July and August. Spread up to 8 miles.
		1963	0	-	-	-	-	Scant reproduction noted.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960 - 1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Gray francolin (cont'd.)	Oklahoma	1960	210	wild	direct	April	Greer County	Found mainly in mesquite, shin-oak, sand plum and skunkbush cover.
		1961	462	"	"	"	Greer County	Ten broods reported with from 6 to 14 chicks
		1962	481	"	"	"	Harmon County Greer County	Heavy hail and rain in June destroyed two nests.
		1963	0				Harmon County	A few birds seen without leg bands. Dispersion now extends up to 50 miles.
Texas		1959	270	"	"	"	McCulloch County	Moved from range towards farmlands. Broods reported.
		1963	683	farm	"	May, July, September	McCulloch County	Good survival. 6 broods observed. Dispersion up to 6 miles.
Bamboo partridge (<u>Bambusicola</u> <u>thoracica</u> <u>thoracica</u>)	Alabama	1962	26	farm	direct	February	Green County	Excellent survival. Some breeding
		1963	32 79	" "	" "	April August	" "	Some seen. No broods reported.
	Arkansas	1962	50	"	"	April	Wattensaw Area	One brood reported.
		1963	70	"	"	"	"	Birds seen and heard until mid- summer. One brood located. Dispersed. No broods seen.
Hawaii			120	"	"	"	Big Lake Area	
		1959	140	wild	"	spring	Mauai	One brood located 1960. Dispersed 1½ miles by 1961. Preferred cover was <u>Acacia decurrens</u> A maximum of 4 birds heard calling.
		1963	0					

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Bamboo partridge (cont'd.)	Missouri	1961	37	farm	direct	March	Scott County	Disappeared
		1961	69	"	"	"	New Madrid	Disappeared
	Oregon	1962	30	"	"	July	Broadbent Area	No report to date.
		1963	0	"	"	"	Coos County	Landowner reports occasional sightings in release area.
	Tennessee	1963	200	"	gentle	October	Gibson County	Too early to tell.
Spanish red-legged partridge (<u>Alectoris</u> <u>rufa hispanica</u>)	Colorado	1961	23	"	"	April	Masonville	Disappeared.
		1963	0	"	"	"	"	Occasionally ranchers report seeing 1 or 2 birds. No reproduction noted.
French red-legged partridge (<u>Alectoris</u> <u>rufa rufa</u>)	California	1963	342	"	"	February	Pomponia Canyon, San Mateo Co.	6 broods observed by residents of the area.
	Oklahoma	1961	98	"	direct	October	Kiowa County	Excellent survival. No broods found.
		1962	196	"	"	March	" "	Dispersion 3 miles.
		1963	50	"	"	"	" "	Few observations. One brood reported, but not confirmed.
	Texas	1961	304	"	"	Apr-June	Lamar County	Birds tame. Several broods reported.
		1962	400	"	"	March	" "	2 to 3 broods reported.
		1963	0	"	"	"	" "	Dispersion 10 miles.
			244	"	"	May	Lavaca County	1 brood of 6 seen.
			301	"	"	July	" "	Good survival. 3 broods observed.
			260	"	"	August	" "	"
			31	"	"	"	Fayette County	Dispersion up to 4 miles.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
French red-legged partridge (cont'd.)	Washington	1961	809	farm	direct	Mar-June	Three Counties	Birds and few broods seen.
		1962	2295	"	"	Mar-Apr	Twelve Counties	Birds and broods seen in 3 counties. Many birds reported from Yakima Co. See FGIP report #12 for details.
		1963	280	"	"	Apr-June	Adams County	These releases all follow-up plants on original release sites.
			280	"	"	" "	Challam County	
			560	"	"	" "	Clark County	
			80	"	"	June	Columbia County	Several broods observed in spring, but too early to make a definite prediction
			260	"	"	Apr-June	Island County	
			371	"	"	" "	San Juan County	
			500	"	"	April	Walla Walla County	
			816	"	"	Apr-June	Yakima County	Eastern Washington looks better than Western Washington
Turkish chukar partridge (<u>Alectoris</u> <u>graeca</u> <u>cypriotis</u> or <u>kurdistanica</u>)	California	1960	200	"	gentle	January	Camp Pendleton,	Few observations made of Camp Pendleton or Kenedy Tables releases and contact lost 3 mos. following each release in Little Rock Canyon. Ranchers occasionally hear and see birds at Kenedy Tables; hunters and fishermen at Little Rock Canyon.
			240	(N.Mex.stock)	"	March	San Diego County	
			200	"	"	January	Kenedy Tables,	
			244	"	"	March	Madera County	
			200	"	"	January	Little Rock Canyon	
			240	"	"	March	Los Angeles Co.	
			200	"	"	January	San Ardo,	
			240	"	"	March	Monterey County	
			423	"	"	March	Montague, Siskiyou Co.	
		1961	100	"	"	January	Camp Pendleton,	
			100	"	"	"	San Diego County	
			100	"	"	"	Kenedy Tables, Madera County	
			100	"	"	"	Little Rock Canyon, Los Angeles Co.	
			100	"	"	"	San Ardo, Monterey Co.	
			100	"	"	March	Montague, Siskiyou Co.	

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Turkish chukar partridge (cont'd.)	California (cont'd.)	1962	125	farm (N.Mex.stock)	gentle	January	Camp Pendleton, San Diego County	Carry over from all releases seen at San Ardo and at Montague in 1963. Broods observed each year on both areas. A small pop- ulation is becoming established on San Ardo; the Montague area shows promise. At Gilroy birds were seen in August, one brood was reported. Broods have been reported at Upper Panoche and at Wilbur Springs, none on Freeborn Mountain where the birds are well scattered. More releases are planned for Upper Panoche, Freeborn Moun- tain and Wilbur Springs.
			120	"	"	"	Kenedy Tables, Madera County	
			120	"	"	"	Little Rock Canyon, Los Angeles County	
			130	"	"	"	San Ardo, Monterey County	
			125	"	"	March	Montague, Siskiyou County	
		1963	299	"	"	January	San Ardo, Monterey County	
			294	"	"	March	Montague, Siskiyou County	
			150	"	"	January	Gilroy, Santa Clara County	
			400	"	"	"	Upper Panoche Creek, San Benito County	
			400	"	"	"	Freeborn Mountain San Louis Obispo County	
			350	"	"	February	Wilbur Springs, Coluse County	

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Turkish chukar partridge (cont'd.)	Hawaii	1961	64	farm	gentle	August	Maui	Broods noted in May to July on several areas. Moved into low- land dry canyons. Birds dis- persed rapidly.
			72	(New Mexico)	"	"	Lanai	
			72	"	"	"	Molokai	
			48	"	"	"	Oahu	
			48	"	"	"	Kauai	
		1963	0					No reports received.
	New Mexico	1960	1792	farm	direct	All	Throughout most	Broods reported in some areas but no substantial reproduction recorded. See FGIP report #12 for details
		1961	4338	"	"	Seasons	of State in	
		1962	5232	"	"		apparently suit- able cover.	
		1963	200	"	"	March	Rio Grande Canyon Taos County	
650			"	"	"	LaPlata and Animas Valleys, San Juan Co.	"	
110	"		"	October	Rocky Arroyo, Eddy County	"		
Barbary partridge (<u>Alectoris</u> <u>barbara</u>)	California	1958	152	"	"	January	Yokohl Valley, Tulare County	Very few sightings by Department personnel or residents of the area. No reproduction
		1959	131	"	"	"	"	
		1959	135	"	"	"	Academy, Fresno Co.	
		1960	174	"	"	February	Yokohl Valley, Tulare County	
			200	"	"	"	Academy, Fresno Co.	
			200	"	"	November	"	
			200	"	"	"	Copperopolis, Calaveras County	

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Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Barbary partridge (cont'd.)	California (cont'd.)	1962	570	farm	direct	January	190 each to Lan- caster, Los Angeles Co., Winchester, Riverside Co.; San Felipe Valley, San Diego County	All birds lost sight of within 3-6 months following release. Releases discontinued in 1963 because of drought conditions.
			194	"	"	-	Topo Valley, Monterey County	Few birds seen in Topo Valley a year following release.
			200	"	"	January	Copperopolis, Calaveras County	Birds disappeared from Copper- opolis a month after release.
		1963	350	"	"	-	Topo Valley, Monterey County	Thirty birds were reported 20 miles from the release site following the 1963 release.
			300	"	"	February	Copperopolis, Calaveras County	
			227	"	"	"	San Benito River, San Benito County	First brood of this species observed by Department per- sonnel at San Benito River
	Hawaii	1960	64	"	"	July	Maui	No broods seen but reports of coveys and pairs on Maui, Lanai, Molokai indicate some, possibly marginal, survival.
			77	"	"	Jan-July	Lanai	
			68	"	"	July	Molokai	
		1961	112	"	"	Feb-Oct	Maui	
Seesee partridge (<u>Ammoperdix</u> <u>grisgeogularis</u>)	Oklahoma	1962	24	"	"	March	Kiowa County	Pairs seen regularly during June but no broods reported.
		1963	41	"	"	"	" "	No records of reproduction. No mortality reports. Dispersal up to 1½ miles from release site.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Common Indian sandgrouse (<u>Pterocles</u> <u>exustus</u> <u>hindustan</u>)	Hawaii	1961	140	wild	gentle	March	Hawaii	Pohakuloa (Hawaii 1962) release
		1961	137	"	"	"	Molokai	most successful to date
		1961	118	"	"	"	Kauai	Dispersion 15 miles. Kauai and
		1962	401	"	"	Mar-May	Hawaii	Molokai results doubtful.
		1963	0	-	-	-	-	No reports. It appears doubt- ful that species will establish.
	Nevada	1960	400	"	direct	spring	Pahranagat Valley	Moved southward following cold October rains.
		1961	1048	"	"	"	Moapa and Virgin Valley	Most birds left area by Jan.1962. Dispersion rapid. Few birds overwintered on area.
		1961	600	"	"	"	Pahrump Valley	Two banded birds recovered 800 miles south at Navajoa, Sonora, Mexico.
		1963	0					No birds reported.
Red Junglefowl (<u>Gallus</u> <u>gallus</u> <u>murghi</u>)	Alabama	1962	23	farm	"	March	Baldwin County	Surplus males. Birds tame.
		1963	17	"	"	April	Greene County	Some being seen.
			38	"	"	August	" "	
	Georgia	1963	57	"	"	Sept.	Decatur County	Too soon to tell.
			48	"	"	"	Clark Hill G.M.A.	Too soon to tell.
	Florida (EAB)	1963	92	"	"	Oct-Dec	Eglin A.F. Base	Too soon to tell.
	Oklahoma	1961	20	"	"	Sept.	Stringtown G.M.A.	Good survival. Little dispersion. Very wary. Difficult to locate. Only 8 females in all liberated. One nest broken up.
		1962	28	"	"	February	Stringtown G.M.A.	

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Red Junglefowl (cont'd.)	Oklahoma (cont'd.)	1963	50	farm	direct	February	Pear Creek, McCurtain Co.	Mortality appeared high immediately after release Birds moved into thick black- jack post oak type. No reports of broods. Birds wild and difficult to observe.
			165	"	"	"	Little River McCurtain Co.	
			57	"	"	Mar-June	Cookson Refuge, Blackberry Is- land at Grand Lake	
Western Iranian pheasant (pure strain) (<u>Phasianus</u> <u>colchicus</u> <u>talischensis</u>)	Florida	1962	85	"	gentle	February	Raiford, Union Co.	Four flocks; three mile movement. Birds still seen in area.
		1963	0	-	-	-	-	
	Kentucky	1962	18	"	direct	April	Henderson County	Mixed with western Iranian- ringneck crosses on same area. Results very encouraging.
		1963	276	"	"	Apr-Oct.	" "	
	Oklahoma	1962	147	"	"	March	Arkansas River Valley	Breeding signs observed.
			164	"	"	March	Ft. Gibson G.M.A.	Breeding signs observed.
	Virginia	1961	296	"	gentle	Apr-Oct.	New Kent County	Favorable. Reproduction evident and a good number of birds seen. Favorable reports on reproduction
		1962	67	"	"	April	New Kent County	
		1963	458	"	direct	Apr-Sept.	King William Co.	
Western Iranian ringneck cross	Alabama	1960	35	"	"	November	Limestone County	Good.
		1961	42	"	"	January	" "	Good.
		1962	37	"	"	"	" "	Good.
		1963	532	"	"	Apr, July, Aug, Sept	" "	Good. Birds seen consistently.

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Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month or Re- lease	Area	Results to Date
Western Iranian ringneck cross (cont'd.)	Arkansas	1962	44	farm	direct	March	-	Two broods seen on Rainey
			44	"	"	"	-	Brakes area; four pair adults
			100	"	"	"	-	noted on Wattensaw area.
		1963	24	"	"	Mar, Aug	Brandywine Island	Some adults, no young seen.
			48	"	"	" "	Mariana	One brood seen.
			48	"	"	" "	Wattensaw G.M.A.	Adults and 3 broods observed.
	Florida	1963	76	"	"	" "	Rainey Brakes G.M.A.	Nine young seen Aug. 1963.
			40	farm(Va.)	gentle	February	Experimental Grasslands farm	Disappeared.
			14	" "	"	"	" " "	Disappeared.
			25	" "	"	"	Jim Woodruff G.M.A.	Good survival. Some reproduction.
	Iowa	1962	85	" "	"	"	Jim Woodruff G.M.A.	Two broods of seven and eight observed. Dispersion 8 miles.
			-					Birds still seen on area, reproduction.
	Georgia	1963	212	" "	direct	Sept.	SW Gordon County	Too soon to tell.
	Kentucky	1962	155	farm	"	Apr, July, Oct.	Henry County	Intermixed with ringnecks and Eastern Iranian, pure and cross stocked the same time.
		1963	0					Many broods sighted from these releases.
	Kentucky	1961	258	"	"	summer	Henderson County	Dispersed up to 4 miles.
		1962	432	"	"	Apr-Oct.	" "	Two nests, 36 broods reported.
		1963	593	"	"	October	" "	Dispersal up to 19 miles. Results currently encouraging. 57 broods recorded during 1963 Expanding release area in this county.

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Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Western Iranian ringneck cross (cont'd.)	Missouri	1959	884	farm	gentle	Sept-Nov.	Chillicothe	11 broods reported in 1959.
		1961	-	"	"	Feb-Apr	"	46 broods reported in 1960.
		1962	0					34 broods reported in 1961.
		1963	0					16 broods reported in 1962.
	Crowing cock indices substantiate this trend.							
	South Carolina	1961	154	farm(Va.)	direct	Apr-Dec	Eutaw Springs	Many birds and seven to eight broods reported summer 1961.
		1962	47 ⁺	" "	"	summer	York County	Less birds and broods 1962.
		1963	123	" "	"	Mar-Oct	Eutaw Springs	Not reported.
	Tennessee	1961	573	farm	"	-	Henry County	Broods and adults reported.
		1962	648	"	"	Aug-Oct	Lauderdale Co.	Slight year to year decrease.
			961	"	"	" "	Sequatchie Co.	Broods seen on all areas.
			694	"	"	" "	Henry County	Spring crowing counts taken.
		1963	1667	"	"	Aug-Sept	Lauderdale Co., Franklin Co., Henry Co.	Spring crowing counts taken.
								Broods seen on all areas;
Virginia	Virginia	1959	1972	"	either	Apr-Oct	Charles City, Surry,	Sequatchie Co. reports encouraging results; crowing count and flush count surveys continued; follow-up of releases not completed on all areas.
		1960	1633	"	direct	" "	Prince George, Rich-	Birds established and building up to large populations on several release areas.
		1961	1240	"	either	" "	mond, Campbell, Cos.	1963-Overpopulation of pheasants on several release areas.
		1962	302	"	"	April		Very favorable early results.
		1963	490	"	direct	Apr-Aug	Campbell and Greensville Cos.	Good reproduction noted.

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Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Eastern	Iowa	1962	45	farm	direct	Apr-July	Henry County	Intermixed with other strains.
Iranian		1963	0					Many broods seen in 1963.
pheasant								
(pure strain)	Kentucky	1962	20	"	"	" "	Christian County	Crosses also released on this
(Phasianus			120	"	"	October	" "	area.
colchicus		1963	191	"	"	"	" "	Few birds reported.
persicus)								
	Maryland	1962	41	"	"	March	Wicomico County	Birds and reproduction noted.
	Missouri	1960	83	"	gentle	"	Rich Hill	Three broods reported in 1961.
		1962	51	"	"	Mar-Apr	Rich Hill	Too early to determine results.
								11 broods in 1962. Crowing
								count indices low.
		1963	132	"	"	" "	Rich Hill	Five broods reported in 1963;
								crowing cock index showed
								substantial increase.
	Virginia	1961	534	"	"	Apr-Sept	Orange County	Good numbers of birds observed.
		1962	458	"	either	April	" "	Reproduction excellent.
		1963	882	"	direct	Apr-Aug,	Cumberland County	Evidence of reproduction.
						Sept.		
Eastern	Arkansas	1961	76	farm (Mo.)	"	April	Rainey Brakes	Birds dispersed but several
Iranian			12	" "	"	"	Marianna	broods reported.
ringneck			12	" "	"	"	Wattensaw G.M.A.	Two broods reported but no
cross								birds seen after Oct. 1961.
	Iowa	1962	90	farm	"	Sept.	Henry County	Too early to tell.
		1963	110	"	"	Jun-Oct	" "	Intermixed with other strains
								released at same time.
								Many broods seen.

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Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Eastern Iranian ringneck cross (cont'd.)	Kentucky	1961	104	farm	direct	summer	Christian County	Dispersed.
		1962	300	"	"	Apr-Oct	" "	One nest, 10 broods reported.
		1963	296	"	"	Sept-Nov	" "	Dispersed up to 12 miles. Eight broods, 1 nest recorded. Not optimistic
	Maryland	1961	9	"	"	March	Girdletree County	Poor.
			62	"	"	"	Worcester County	Good.
			58	"	"	Sept.	Harford County	Surplus cocks only.
			26	"	"	Apr-Oct	Cecil County	Surplus cocks.
			37	"	"	October	Baltimore County	Surplus cocks.
		1962	95	"	"	March	Worcester County	Good.
			80	"	"	"	Somerset County	Good.
			81	"	"	"	Dorchester County	Good.
			42	"	"	"	Wicomico County	Good.
		1963	253	"	gentle	"	5 Counties, lower Eastern Shore	Poor.
	Missouri	1959-	1633	"	"	fall	Centralia	29 broods reported in 1960.
		1961		"	"	Feb-Apr	"	45 broods reported in 1961.
		1963	0					49 broods reported in 1962. 26 broods reported in 1963. Crowing cock indices substan- tiate this trend.
	Oklahoma	1963	73	"	direct	February	Fort Gibson G.M.A.	Good survival; 7 broods reported.
			67	"	"	"	Osage, Pawnee Cos.	Not reported.

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Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Eastern Iranian ringneck cross (cont'd.)	Tennessee	1960	5393	farm	direct	Sept-Nov	Monroe, Cumberland, Benton, Roane, Cheatham, Coffee, Counties	Broods observed on all areas. Results encouraging in Monroe, Cheatham and Coffee Counties
		1961	5785	"	"	Aug-Oct	Monroe, Benton, Roane, Cheatham, Coffee, Meigs and Grainger Cos.	Same as above.
		1962	894	"	"	" "	Lawrence County	Too early to determine.
			1899	"	"	" "	Greene County	Too early to determine.
			1144	"	"	" "	Meigs County	Too early to determine.
		1963	535	"	"	Aug-Sept	Lawrence County	Scattered broods reported from all areas; best reproduction in Meigs Co.; slight to steady decrease in population appar- ent on all areas.
	Virginia	1959	1310	"	either	Oct-Apr	Halifax, Campbell,	Low reproduction and general decline in population.
		1960	999	"	direct	" "	Charlotte, King,	
		1961	1287	"	either	" "	George, Fluvanna,	
		1962	514	"	"	April	Nelson and Cumber- land Counties	Some reports on reproduction. Not outstanding. Group dis- continued after this season.
		1963	927	"	direct	Apr-Aug, Sept.	Page County	
Eastern, Western Iranian ringneck cross	Ohio	1960	936	"	"	Oct-Mar	S.E., S. and S.W. Ohio	Some reproduction but no evidence of establishment.
		1961	849	"	"	July-Nov	S.W. Ohio	
		1962	478	"	"	November	S.E., S. Ohio	
	Virginia	1959	333	"	"	October	Camp Pickett	Not known.
		1960	137	"	"	"	Cumberland County	Not known.
		1962	47	"	"	"	" "	Not known.
		1963	0					Result of releases not known.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Japanese green pheasant (pure strain) (<u>Phasianus</u> <u>colchicus</u> <u>robustipes</u>)	Alabama	1962	34	farm	direct	January	Autauga County	Too early to tell.
		1963	0					No birds reported.
	Georgia	1963	238	farm(Va.)	"	Sept.	NE Gordon Co.	Too early to tell.
	Illinois	1963	77	farm	"	October	Neogo	Too early to determine.
	Ohio	1960	200	"	"	November	SE and S Ohio	No evidence of survival.
	Tennessee	1962	860	"	"	Aug-Oct	Jefferson County	Too early to determine.
		1963	965	"	"	Sept.	Dyer County, Jefferson County	Reproduction believed fair; follow-up releases not completed
	Virginia	1960	204	"	either	October	Accomac-North-	Encouraging. Many adults and
		1961	621	"	"	Apr-Oct.	ampton Counties	young observwd.
		1962	301	"	"	April	Northampton County	
		1963	1129	"	direct	Apr-Aug- Sept.	Northumberland and Nansemond County	Mostly fall '63 releases. Reports from earlier releases favorable.
Japanese green ringneck cross	Tennessee	1962	1349	"	"	Aug-Oct.	Henderson County	Too early to tell.
		1963	1236	"	"	Aug-Sept.	" "	Reproduction believed good to fair.
Korean ringneck pheasant (<u>Phasianus</u> <u>colchicus</u> <u>karpowi</u>)	Missouri	1962	305	"	gentle	spring	Bernie (Bootheel)	66 broods reported in 1963.
		1963	0					Crowing index high.
	Pennsylvania	1962	234	"	"	March	Ray's Cove, Bedford County	Surplus game farm stock, 3/4 males. 10 males shot in open season.
		1963	546	"	"	"	Bedford, Erie and Crawford Counties	Some reproduction noted.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Afghan white- winged pheasant (<u>Phasianus</u> <u>colchicus</u> <u>bianchii</u>)	New Mexico	1961	18	farm	gentle	February	Washington Ranch, Eddy County	Surplus males only.
			59	"	"	November	San Juan County	Surplus males only.
		1963	400	"	"	March	Red Rock, Gila Valley Grant County	Fair reproduction, encouraging
	Oklahoma	1963	16	"	"	February	North Fork of Red River, Greer County	No reproduction recorded. Survival good with no known losses. Dispersion about 5 miles.
	Nevada	1963	48	"	"	April	Virgin Valley	No broods sighted yet. Complete dispersal from release area.
Afghan white- winged pheasant ringneck cross	Oklahoma	1961	200	"	"	Sept.	Grant County	Winter survival good.
			200	"	"	"	Canton Lake	Not known.
			200	"	"	"	Dewey County	Not known.
			425	"	"	February	Grant County	Two broods reported. Dispersion 12 miles.
		1962	446	"	"	"	Canton Lake	Winter survival good, 2 broods noted. Dispersion 25 miles.
			235	"	"	"	Dewey County	Survival good. One brood seen.
			340	"	"	"	Salt Fork River	Reproduction and survival good as compared to fair in past.
			450	"	"	"	Grant County	Mortality low. Dispersion 10-15 miles in some cases.
			375	"	"	"	Dewey, Custer, Roger Mills Cos. Canton Lake	Cross consisted of 1/4 ringneck 3/4 white-winged pheasant blood
Kalij pheasant (<u>Lophura leucomelana hamiltonii</u>)	Virginia	1963	138	"	both	April	Giles County	Not known. Some birds have been seen and one brood reported.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

The following species have been introduced by States, cooperating with the Bureau's Foreign Game Introduction Program, with some or no Federal assistance.

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Reeves pheasant (<u>Syrnaticus</u> <u>reevesi</u>)	Arkansas	1959	100	farm	direct	-	Black Mountain	Two broods reported in 1960. Birds dispersed. No birds reported.
		1960	147	"	"	-	" "	
		1963	0					
	Hawaii	1961	80	farm (Cal.)	gentle	Sept-Oct.	Maui	Kauai and Hawaii release hold- ing their own; others doubtful. Broods observed on Kauai and Hawaii. Unbanded adults seen on Hawaii and Molokai. Species holding its own on several of the release areas; but is nowhere indicating establishment. Small broods were reported from Molokai and Oahu; adults from the original releases were seen, in ex- cellent condition on Hawaii and Kauai.
			153	" "	"	" "	Lanai	
			121	" "	"	" Nov.	Oahu	
			194	" "	"	" "	Kauai	
		1963	0					
	Iowa	1963	132	farm	"	Jan, June	Stephens State Forest, S.C. Iowa	The January releases were sighted throughout the winter. Many of the June releases are seen regularly.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Reeves pheasant (cont'd.)	Kentucky	1959	765	farm ⁽¹⁾	direct	fall	Two areas	Only 3 broods reported through 1961. Birds generally tame. For detailed report see FGIP Report #12.
		1960	2301	"	either	"	Seven areas	
		1961	994	"	direct	summer	Three areas	
		1962	2623	"	"	summer-fall	Five areas	
		1963	938	"	"	" "	Three areas	
	Ohio	1958-1961	21,952	"(1)	either	June-Oct.	Southeastern Ohio	Results not encouraging. No additional releases scheduled. Some reproduction but little evidence of establishment.
		1963	0					
	Virginia	1960	106	farm ⁽¹⁾	direct	October	Cumberland Forest	Not known.
		1961	12	"	"	April	Cumberland Forest	Not known.
		1962	101	"	"	"	Philpot Reservoir	Not known.
		Discontinued						Apparently a failure.
Reeves Ohio ringneck cross	Ohio	1960	260	"	"	Oct-Nov	S.E. and S. Ohio	No evidence of establishment.
		1961	950	"	"	" "		
Elliot's pheasant (<u>Syrmaticus</u> <u>elliotti</u>)	Ohio	1960	300	"	"	November	S. Ohio	No evidence of survival.
		1961	950	"	"	"	S. Ohio	

- (1) Brood stock was the best obtainable from breeders in the United States but in captivity for many years. Wild-trapped Reeves breeders secured in France by the Foreign Game Introduction Program seldom used because of the time required to develop a strain that would reproduce well in captivity.

FOREIGN GAME INTRODUCTION PROGRAM

Table 1. Summary of Foreign Game Bird Releases and Results - 1960-1963 (continued)

Species	State	Year	Number Re- leased	Source	Direct or Gentle Release	Month of Re- lease	Area	Results to Date
Erkel's francolin (<u>Francolinus</u> <u>erckelii</u> <u>erckelii</u>)	Hawaii	1960	353	farm (Cal)	gentle	spring to fall	Seven islands	Holding their own on most islands. Breeding February through July. See FGIP report #12 for details.
		1961	51	"	"	November	Molokai	Twenty-five adults and one brood of 9 seen on Lanai.
		1962	150	"	"	Oct-Mar.	Three islands	Small numbers of birds on most islands but nowhere established
		1963	0					
31 Himalayan snowcock (<u>Tetraogallus</u> <u>himalayensis</u>)	Nevada	1963	19	wild- trapped	direct	April	Ruby Mountains (near Elko)	Several sight records reported by sheepherders in the vicinity of the release site at Robinson Lake, 9,000 feet elevation.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Black francolin (<u>Francolinus</u> <u>francolinus</u> <u>asiae</u>)	Alabama	1961	34	1:2	401	11.8	168	41.8	120	78
		1962	44	1:2 - 1:3	340	7.7	257	75.6	165	63
		1963	30	1:3	235	7.8	165	70.0	132	53
	Arkansas	1961	5	1:1	10	2.0	8	80.0	7	7
		1962	8	1:1	184	23.0	-	-	60 (2)	59
		1963	16	1:2	247	15.4	-	-	121	103
	Florida (EAB)	1961	7 (1)	1:1	0	0	0	0	0	0
		1962	10 (1)	-	0	0	0	0	0	0
		1963	7	1:3	216	-	-	-	135	11
		1962	7	flock	19	2.7	-	-	-	0
		1963	7	1:2	53	7.6	14	28	14	8
	Georgia	1960	20	"	63	3.1	-	-	36	29
		1961	20	"	10	0.5	-	-	4	2
		1962	20	1:2 - 1:4	85	4.3	34	40.0	34	4
		1963	22	1:4	61	2.6	32	49.0	32	5
	Kentucky	1961	24 (1)	flock	0	0	0	0	0	0
		1962	35	1:3	407	11.6	352	86.5	315	67
		1963	39	2:3	341	8.7	227	66.6	170	66
	Louisiana	1963	11	1:3 1:2	27 (3)	2.45	-	-	16	11

- (1) Wild-trapped birds penned this year. These usually do not lay for 1 to 2 years following penning.
 (2) Eggs hatched by commercial hatchery.
 (3) Low egg production is believed partly due to fact that breeders were not received on area until 3/29/63.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Black francolin (cont'd.)	New Mexico	1962	35 (1)	1:1	0	0	0	0	0	0
		1963	34	1:1	123	3.6	96	78.0	70	37
	South Carolina	1961	-	-	-	-	-	-	-	-
		1962	30	1:1 - 1:2	-	-	-	-	-	-
		1963	40	-	-	-	-	-	-	-
	Tennessee	1960	10 (1)	1:2	13	1.3	-	-	11	5
		1961	30	1:2	74	2.5	-	-	41	16
		1962	22	1:3	186	8.4	-	-	88	56
		1963	33	1:3	826	25.0	566	68.5	482	207
	Utah	1961	16 (1)	1:1	0	0	0	0	0	0
		1962	57 (1)	1:1	18	0.3	8	44.0	6	4
		1963	23	1:2	38	1.7	16	42.1	12	7
	Virginia	1960	-	1:1	22	-	-	-	-	17
		1961	17	1:1	490	28.9	365	74.5	313	245
		1962	58	1:1	1821	31.4	1480	81.3	1184	716
		1963	58	1:1	1181	20.4	793	67.1	642	514
Gray francolin (<u>Francolinus</u> <u>pondicerianus</u> <u>interpositus</u>)	New Mexico	1962	35 (1)	1:1	84	2.4	-	-	60	49
		1963	50	1:1	436	8.7	371	85.1	306	265
	Oklahoma	1960	36 (1)	1:1	38	6.3	23	60.5	14	9
		1961	3	1:1	26	8.6	-	-	2	0
		1962	3	1:3	28	9.3	11	39.3	11	3
		1963	2	1:2	69	34.5	41	60.0	24	16

(1) Breeders wild-trapped and first year in pens.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Panned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Gray francolin (cont'd.)	Texas	1960	10	1:1	71	7.1	-	-	51	45
		1961	31	1:1	292	9.4	-	-	157	126
		1962	80	1:1	578	7.2	-	-	226	204
		1963	60	1:1	2231	37.0	1065	47.7	812	778
	Utah	1961	8 (1)	1:1	8	1.0	-	-	6	6
		1962	44 (1)	1:1	44	1.0	13	29.5	8	5
		1963	30	1:2	72	2.4	36	50.0	24	18
	Washington	1962	25 (1)	1:1	9	0.4	-	-	7	5
		1963	14	1:1	7	0.5	6	85.7	6	5
Bamboo partridge (<u>Rambusicola</u> <u>thoracica</u> <u>thoracica</u>)	Alabama	1961	34	1:2	401	11.8	168	41.9	120	79
		1962	51	1:1	330	6.5	176	53.3	63	62
		1963	39	1:1	563	14.4	234	41.0	159	116
	Arkansas	1961	15	-	-	-	-	-	-	54
		1962	35	1:1	802	22.9	-	-	264	222
		1963	30	1:1	735	24.5	-	-	307	260
	Kentucky	1960	-	flock	80	-	44	55.0	24	22
		1961	8	"	42	5.3	20	47.6	15	6
		1962	8	"	210	26.3	180	85.7	54	6
		1963	6	"	97	16.1	79	81.4	0	0

(1) Breeders wild-trapped and first year in pens.

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Bamboo partridge (cont'd.)	Missouri	1960	11	1:1	381	34.6	305	80.1	208	200
		1960	4	flock	30	7.5	25	83.3	-	-
		1961	21	1:1	347 (1)	14.7	242 (2)	86.1	172	143
		1962	14	1:1	399		289 (3)	75.0	88 (4)	50
			Same Hens		73	33.8			37 (6)	37
		1962	19	1:1 (7)	130	6.8	103 †	79.0	103 (6)	93
		1963	18	1:1	215	12.0	-	-	154	105
	Oregon	1960	10	1:1	153	15.3	84	54.9	71	32
		1961	25	1:1	258	10.3	67	26.0	58	25
		1962	69	1:1	617	9.0	265	44.4	193	159
		1963	91	flock 1:1,2:5,2:1	523	5.7	236	45.1	-	-
	Tennessee	1960	13	1:1	146	11.2	-	-	52	33
		1961	25	1:1	276	11.0	-	-	89	59
		1962	54	1:3	742	12.0	-	-	267	172
		1963	141	flock 1:3	2013	14.3	1167	57.5	731	321
	Washington	1960	19	-	7	0.4	6	85.6	5	4
		1961	-	-	-	-	-	-	-	-
		1962	72	1:1	1085	15.1	-	-	275 ‡	240
		1963	136	1:1	3160	23.2	-	33.9	936	462

(1) Only 281 eggs set.

(2) Twelve hens incubated 39 late eggs in nests in the pens; of these 35 hatched.

(3) Fertility based on number of eggs set, not on total production.

(4) Incubated artificially.

(5) In line-connected pens.

(6) Eggs were left in the pens to be incubated by the female bamboo partridge.

(7) In isolated pens.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Spanish red-legged partridges (<u>Alectoris</u> <u>rufa</u> <u>hispanica</u>)	California	1963	47	1:1	420	8.9	-	43.7	178	123
	Colorado	1960	27	1:1	286	10.6	205	71.7	150	68
		1961	42	1:1	362	8.6	240	66.3	68	15
		1962	38	1:1	33	0.9	27	81.8	22	12
		1963	Production tentatively discontinued							
	Utah	1961	6	1:1	12	2.0	-	-	-	1
		1962	5	1:2	16	3.2	6	37.5	2	2
		1963	4	1:1	37	9.2	12	32.4	9	3
36 French red-legged partridges (<u>Alectoris</u> <u>rufa</u> <u>rufa</u>)	California	1963	283	1:1	2984	10.2	-	69.1	1834	1536
	Kentucky	1961	5	flock	0	0	0	0	0	0
		1962	4	"	51	12.7	38	74.5	21	13
	Oklahoma	1959	9	1:1	61	6.8	46	75.4	35	19
		1960	16	1:1	221	13.8	152	68.8	119	89
		1961	78	1:2	968	12.4	681	70.3	548	468
		1962	92	1:1	166	1.8	126	76.0	82	57
		1963	99	1:1	1681	16.9	963	57.3	762	582
	Texas	1960	37	1:1	650	17.8	-	-	357	327
		1961	58	1:1	1476	25.4	-	-	739	666
		1962	125	1:1	1680	13.4	-	-	835	624
		1963	54	flock 1:1	1711	31.0	-	-	918	842
	Washington	1960	102	-	1553	15.2	-	-	1315	972
		1961	300	-	-	-	-	-	-	-
		1962	355	flock	4390	12.4	-	-	3775	3135
		1963	397	"	4680	11.8	-	88.5	4066	3673

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Seesee	Oklahoma	1960	10	1:2	43	4.3	33	76.7	28	25
partridge		1961	11	1:2	100	9.1	68	68.0	67	65
(<u>Ammoperdix</u>		1962	26	1:1-1:5	125	4.8	90	72.0	45	45
<u>grisgeogularis</u>)		1963	20	1:1	151	7.5	111	73.6	85	76
	Utah	1961	20	1:1	0	0	0	0	0	0
		1962	8	1:2	63	7.9	14	22.2	9	1
		1963	7	1:2	109	15.6	41	47.2	36	31
Turkish	California	1963	67	1:1	3705	55.3	-	-	1978	1547
chukar										
partridge	New Mexico	1962 (1)	70	1:1	1818	26.0	-	-	1550	900 (2)
(<u>Alectoris</u>		1963	12	flock	213	17.7	188	88.3	164	146
<u>graeca cypriotes</u> and <u>kurdestanica</u>)										
Greek chukar	California	1963	28	1:1	304	10.8	-	-	225	183
partridge										
(<u>Alectoris graeca</u> sp.)										
Barbary	California	1963	97	1:1	2199	21.7	-	-	1550	1254
partridge			(Game farm stock)							
(<u>Alectoris barbara</u>)										

(1) Substantial numbers of birds also raised in 1959-1961; record excellent but not reported.

(2) Heavy loss from salmonella infection.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Common	Utah	1961	15 (1)	1:1	0	0	0	0	0	0
Indian		1962	10	1:1-1:2	1	0.1	0	0	0	0
sandgrouse		1963	9	1:1	0	0	0	0	0	0
(Pterocles exustus hindustan)										
Imperial	Utah	1962	6	1:1-1:2	0	0	0	0	0	0
sandgrouse		1963	5	1:1	0	0	0	0	0	0
(Pterocles orientalis orientalis)										
Red junglefowl	Alabama	1961	11	1:5	151	13.7	109	72.2	86	52
(Gallus		1962	29	1:2-1:3	744	25.7	490	65.9	362	60
gallus		1963	30	1:3	736	24.5	604	82.0	523	50
murghi)										
	Florida (EAB)	1962	7	1:3-1:4	295	42.1	-	-	67	31
		1963	1	1:1	17	17.0	-	-	6	4
	(EAB) 1963	1963	12	1:4	367	30.4	260	71.4	143	143
	Georgia	1961	8	flock	35	4.4	-	-	28	22
		1962	10	1:4-1:5	96	9.6	-	-	29	25
		1963	20	1:5	267	13.7	-	-	174	126
	Kentucky	1962	2 (1)	1:1	75	37.5	67	90.5	58	25
		1963	20	1:4	147	9.4	132	89.7	120	114
	Louisiana	1963	9	1:3-1:2	160	17.8	-	-	88 (2)	85

(1) First year in captivity.

(2) 24 eggs failed to hatch due to malfunction of incubator.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Red junglefowl (cont'd.)	Oklahoma	1961	12	1:4	160	13.3	140	87.5	114	106
		1962	34	1:4	1033	30.3	861	83.3	690	465
		1963	60	1:4	1368	22.8	1126	82.4	986	762
	South Carolina	1963	15	1:5	0	-	-	-	-	-
	Tennessee	1962	3 (1)	1:3	4	1.3	-	-	1	0
		1963	7	1:3	0 (3)	-	0	-	0	0
	Virginia	1961	8	-	-	-	-	-	-	-
		1962	13	1:3-1:4	155	11.9	118	74.8	110	93
		1963	22	1:5	443	20.1	257	58.0	224	143
Western Iranian pheasant (pure strain) (<u>Phasianus</u> <u>colchicus</u> <u>talischensis</u>)	Florida	1962	10	-	7	0.7	-	-	1	0
		1963	-	-	168	-	-	-	96	50
	Kentucky	1961	16	1:4	207	13.0	159	77.0	-	99
		1962	20	1:5	556	27.8	460	83.6	354	114
		1963	24	1:6	590	24.5	479	81.1	400	327
	Missouri	1960	8	1:4	56	7.0	44	78.6	25	12
		1961	11	1:5	28	2.5	27	96.5	15	-
		1962	11	1:5	33	3.0	24	80.0	16	13
		1963	56	1:5	388	6.9	262	79.1	206	184 (2)
	Ohio	1960	12	1:1	2	0.2	-	-	-	-
		1961	12	1:1	16	1.3	10	90.9 (4)	9	0
		1962	4	1:1	13	3.3	6	50.0 (4)	4	1

(1) First year in captivity.

(2) Birds banded at 6 weeks.

(3) Coccidiosis in breeders

(4) Percentage based on eggs set in incubator, not on eggs laid.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Western Iranian pheasant (cont'd.)	Oklahoma	1963	40	1:4	628	15.7	488	77.0	423	368
	Tennessee	1960	8	1:4	46	5.8	-	-	27	18
		1961	14	1:5	139	9.2	-	-	79	59
		1962	43	1:4	257	5.6	-	-	115	78
		1963	56	1:4	479	8.6	241	50.3	167	133
	Virginia	1960	45	1:4	-	-	-	-	-	275
		1961	64	1:4	1107	16.8	929	77.9	724	540
		1962	75	1:4	2099	28.0	1616	77.0	1325	978
		1963	69	1:4	1858	26.9	1642	88.3	1122	898
Western Iranian ringneck cross	Alabama	1961	72	1:7	365	5.0	186	51.0	141	126
		1962	62	1:4-1:5	1109	17.9	817	73.7	486	437
		1963	50	1:5	1000 +	-	-	-	-	420
	Iowa	1961	-	-	75	-	52	69.3	35	35
		1962	10	1:10	225	22.5	165	60.0	150	125
		1963	none							
	Kentucky	1961	42	1:4	2045	48.7	1147	77.1	906	745
		1962	36	1:6	1382	38.4	1161	84.6	877	686
		1963	54	1:6	2383	44.1	2054	86.1	1567	1356
	Missouri	1960	24	1:8	1176	49.0	834	81.0	465	361
	Ohio	1960	24	-	810	33.7	714	91.1 (1)	690	-
	Oklahoma	1962	47 (F-1)	1:7	-	-	-	-	-	-
			7 (F-2)	1:7	303	43.3	253	83.5	208	191

(1) Percentage based on eggs set in incubator, not on eggs laid.

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Western	South Carolina	1961	25	1:5	-	-	-	-	-	62
Iranian		1962	-	1:5	-	-	-	-	-	60 †
ringneck		1963	-	-	-	-	-	-	-	200 †
cross										
(cont'd.)	Tennessee	1961	40	1:4	2258	56.2	-	-	1343	1100
		1962	45	1:6	1477	32.8	-	-	880	694
		1963	100	1:6	3459	34.6	2750	79.5	2158	1667
	(Talish 3/4 x ringneck 1/4)	1962	43	1:6	1427	33.2	-	-	794	648
		1963	Discontinued							
	(Talish 1/4 x ringneck 3/4)	1962	48	1:6	2460	51.2	-	-	1175	961
		1963	Discontinued							
	Virginia	1960	40	1:5	-	-	-	-	-	874
		1961	30	1:5	1888	62.9	1507	79.8	1272	944
		1962	30	1:5	1981	66.0	1605	81.0	1316	933
		1963	29	1:5	1621	56.0	1243	76.7	1043	834
Eastern	Iowa	1961	-	-	100	-	79	79.0	67	58
Iranian										
pheasant	Kentucky	1961	10	1:4	326	32.6	248	76.1	112	70
(pure strain)		1962	20	1:5	479	23.9	403	85.0	320	103
(Phasianus		1963	22	1:6	831	37.7	646	77.7	518	441
colchicus										
persicus)	Missouri	1960	24	1:5	669	27.8	456	68.2	342	246
		1961	24	1:8	616	25.6	333 (1)	80.1	246	-
		1962	27	1:5	686	25.4	444	79.2	281	221
		1963	57	1:5	2142	37.6	1592	77.2	1266	1124 (2)

(1) 200 eggs sent to Iowa.

(2) Birds banded at 6 weeks.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Eastern Iranian pheasant (cont'd.)	Ohio	1960	18	1:2-1:5	52	2.8	44	84.6	40	21
		1961	22	1:2-1:5	49	2.2	38	90.5 (1)	27	15
		1962	12	1:4	194	16.2	158	89.0	114	44
	Tennessee	1960	10	1:3	38	3.8	-	-	21	8
		1961	15	1:5	92	6.1	-	-	64	40
		1962	32	1:4	188	6.0	-	-	91	62
		1963	48	1:4	441	9.2	249	56.5	188	136
	Virginia	1960	31	1:4	-	-	-	-	-	326
		1961	64	1:4	1970	30.8	1618	82.1	1132	985
		1962	58	1:4	2134	36.8	1600	75.0	1296	832
		1963	59	1:4	2010	34.1	1771	88.1	1014	811
Eastern Iranian ringneck cross	Illinois	1962	9	1:4-1:5	poor	-	-	-	-	16
		1963	15	1:5	poor	5	21	33.3	21	18
	Iowa	1962	10	1:10	250	25.0	125	50.0	100	90
		1963	10	1:10	240	24.0	145	60.0	125	105
	Kentucky	1961	31	1:3	976	31.5	735	75.3	495	301
		1962	19	1:5	874	46.0	765	88.5	654	320
		1963	28	1:6	1427	51.0	1208	85.0	944	820
	Maryland	1960	7	1:1	423	60.4	-	-	161	104
		1961	29	1:1	1070	36.9	-	-	679	456
		1962	41	1:3-1:4	694	17.0	-	-	327	220
		1963	44	1:4	988	22.0	-	-	544	500
	Missouri	1960	18	1:6	1059	58.8	887	85.8	648	-

(1) Percentage based on eggs set in incubator, not on eggs laid.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Eastern	Tennessee	1961	220	1:5	10900	49.5	-	-	7365	5826
Iranian		1962	60	1:6	2582	43.0	-	-	1434	1144
ringneck cross (cont'd.)		1963	50	1:5	1010	20.2	829	82.1	703	535
	(Persicus 3/4 x ringneck 1/4)	1962	60	1:6	2399	40.0	-	-	1142	894
	(Persicus 1/4 x ringneck 3/4)	1963	discontinued							
		1962	166	1:6	3042	46.0	-	-	2189	1934
		1963	discontinued							
	Virginia	1960	45	1:5	-	-	-	-	-	1203
		1961	30	1:5	1815	60.5	1393	76.8	1218	907
		1962	35	1:5	2170	62.0	1714	79.0	1422	973
		1963	34	1:5	1379	40.6	1007	73.0	820	689
Western and Eastern Iranian, Ohio ringneck cross	Ohio	1960	160	1:4-1:8	2244	14.0	1885	87.7	1751	1000 ±
		1961	284	flock	3325	11.7	2557	88.6 (1)	2185	1041
Japanese green pheasant (Phasianus colchicus robustipes)	Illinois	1962	96	1:7	poor	-	-	-	-	150
		1963	75	1:7	poor	7.0	250	40.0	230	200
	Kentucky	1962	30	flock	128	4.3	104	81.3	54	0
		1963	75	-	-	-	-	-	-	-
	Maryland	1963	15	-	-	-	-	-	-	-

(1) Percentage based on eggs set in incubator, not on eggs laid.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Japanese green pheasant (cont'd.)	Ohio	1960	165	1:5-1:10	1825	11.0	1271	77.4	1181	680
		1961	373	flock	1402	3.8	969	86.5 (1)	697	340
		1962	18	1:2-1:5	349	19.4	198	90.0 (1)	170	74
	Tennessee	1961	15	1:3	398	26.5	-	-	230	173
		1962	81	1:4	2712	33.5	-	-	1576	1190
		1963	95	1:5	2131	22.4	1627	76.3	1399	1117
	Virginia	1960	52	1:3	-	-	-	-	-	400
		1961	60	1:3	1898	31.6	1611	84.8	1291	949
		1962	57	1:3	2306	40.6	1891	82.0	1588	1043
		1963	73	1:3	2394	32.8	1993	83.2	1588	1302
Japanese green ringneck cross	Tennessee	1962	72	1:6	2964	41.0	-	-	1543	1349
		1963	70	1:5	2926	41.8	1900	65.0	1561	1236
Korean ringneck pheasant (Phasianus colchicus karpowi)	Illinois	1960	1	1:1	-	-	-	-	19	10 ±
		1961	11	flock	-	-	-	-	-	-
		1962	25	1:5	-	-	-	-	-	150
		1963	21	1:7	poor	15.0	-	-	-	150
	Indiana	1962	113	flock	669	5.9	-	-	401	190
		1963	152	1:6-1:8	2345	15.5	2253	96.0	1419	900
	Missouri	1960	3	1:1	93	31.0	71	87.1	70	36
		1961	12	1:2	372	31.1	342	91.4	264	-
		1962	38	1:5	1035	27.2	827	87.8	733	536 (2)
		1963	51	1:5	2338	45.8	1926	86.3	1771	1532

(1) Percentage based on eggs set in incubator, not on eggs laid

(2) Birds banded at 6 weeks.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Korean ringneck pheasant (Cont'd.)	Ohio	1960	4	1:2	106	26.5	62	63.3	61	48
		1961	18	1:2	594	33.0	362	82.7	315	145
		1962	23	1:2	610	26.5	354	89.0 (1)	302	138
	Pennsylvania	1960	5	-	-	-	-	-	-	50 $\frac{1}{2}$
		1961	-	-	-	-	-	-	-	300 $\frac{1}{2}$
		1962	108	flock	1400	13	1070	88.0	909	806
		1963	195		1438	7	1233	86.0	1029	940
45 Afghan white- winged pheasant (<u>Phasianus</u> <u>colchicus</u> <u>bianchii</u>)	California	1963	10	1:1	332	33.2	-	-	184	112
	Missouri	1960	4	1:4	49	12.2	48	98.0	39	24
		1961	12	1:6	73	6.1	38	52.1	27	-
		1962	15	1:5	191	12.7	110	67.9	88	85
		1963	discontinued							
	New Mexico	1959	2	1:1	50	25.0	-	-	29	-
		1960	11	-	129	11.7	-	-	67	-
		1961	36	-	605	16.8	-	-	313	-
		1962	170	1:5	1888	11.1	-	-	1067	1003
		1963	359	1:5	5889	16.4	4324	73.4	2760	2340
	Ohio	1960	3	1:1	46	15.3	42	91.3	41	17
		1961	8	1:1-1:2	83	10.4	71	98.6 (1)	53	24
		1962	13	1:2	63	4.8	52	83.0	30	21

(1) Percentage based on eggs set in incubator, not on eggs laid.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Afghan white-winged pheasant (cont'd.)	Oklahoma	1960	5	1:5	28	5.6	27	96.4	24	17
		1961	12	1:12	132	11.0	86	65.1	71	48
		1962	27	1:5	122	4.5	80	65.5	49	34
		1962	130	1:7	3534	26.4	2298	65.0	1749	1352
		(F-2 cross)								
		1963 (F-2)	46	1:5	432	9.4	259	59.9	219	180
		(F-3)	130	1:5	1776	13.7	1144	64.4	1033	802
	Utah	1961	4	-	-	-	-	-	-	-
		1962	7	1:2-1:3	49	7.0	26	53.1	17	6
		1963	14	1:1,1:4,1:5	358	25.6	204	60.0	150	80
White crested Kalig pheasant (<u>Lophura</u> <u>leucomelana</u> <u>hamiltoni</u>)	Oregon	1962	3 (1)	1:1	24(2)	8.0	16	66.6	16	10
		1963	7	1:1	71	10.0	40	60.6	37	30
	Tennessee	1961 (3)	2	2:2	0	0	0	0	20	0
		1962 (4)	5	1:2	27	5.4	-	-	23	17
		1963	8	1:1	142	17.8	114	80.3	98	72
	Virginia	1961 (3)	8	1:1-1:2	162	20.3	114	70.4	94	82
		1962	29	1:2-1:4	371	12.8	278	75.2	261	228
		1963	32	1:1	776	24.2	655	84.4	521	382

(1) Breeders obtained from private game farms in the United States. Only one female laid.

(2) Only one hen laid.

(3) Wild trapped birds, first year in captivity.

(4) Hand-raised birds.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Except for wild-trapped Reeves pheasants, breeding stock of the following species were obtained by the States indicated from private breeders or other States.

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatches	Number of birds raised
Reeves pheasant (<u>Syrnaticus</u> <u>reevesii</u>)	Illinois (1) (game-farm)	1962	16	1:4	good	-	-	-	-	348
		1963	20	1:4	very good					442
	Iowa (1) (game-farm)	1961	-	-	210	-	110	52.4	79	57
		1962	38	1:2	876	23.0	438	50.0	278	123
		1963	75	1:2	1621	21.6	962	59.3	601	415
	Kentucky (1) (game farm)	1960	200	1:7	6429	32.1	5060	78.8	3607	2135
		1961	182	1:7	6352	34.9	4512	71.3	1811	1125
		1962	217	1:7	8141	37.5	6536	81.0	3972	2615
		1963	80	1:6	2091	26.1	1623	77.6	1191	1054
	Missouri (wild- trapped)	1960	14	1:7	10	0.7	0	0	0	0
		1961	12	1:6	21	1.6	0	0	0	0
		1962	5	1:5	30	6.0	2	7.6	2	1
		1963	1	1:1	52	52.0	47	79.6	40	31
	Ohio (wild- trapped)	1960	15	1:2-1:5	45	3.0	20	54.1 (2)	16	7
		1961	13	1:2-1:5	183	14.1	117	83.6 (2)	88	66
		1962	25	1:2-1:5	239	9.6	169	74.1 (2)	120	75
		1963	none bred							
	Ohio (1) (game farm)	1960	572	flock	15998	28.0	10526	74.3 (2)	8736	6176
		1961	710	"	19792	27.9	10791	60.2 (2)	9114	6763
		1962	9	1:5	61	6.8	50	85.0 (2)	31	19
		1963	none bred							

(1) Breeders were the best obtainable from private game farms in the United States.

(2) Percentages based on eggs set in incubator, not on eggs laid.

FOREIGN GAME INTRODUCTION PROGRAM

Table 2. Summary of Foreign Game Bird Propagation Results - 1960-1963 (continued)

Species	State	Year	Number of breeding hens	How Penned	Total eggs laid	Average per hen	Number of eggs fertile	Percent fertile	Number of chicks hatched	Number of birds raised
Reeves pheasant (cont'd.)	Tennessee (wild- trapped)	1960	8	1:2	0	0	0	0	0	0
		1961	8	1:8	75	9.4	-	-	28	19
		1962	15	1:3	86	5.7	-	-	34	19
		1963	25	1:4	381	15.2	236	61.9	175	84
	Virginia (game-farm)	1960	15 discontinued	1:7	-	-	-	-	-	264
Reeves pheasant Ohio ringneck cross	Ohio	1960	6	1:2	159	26.5	9	6.0 (1)	8	5
		1961	6	1:2	107	17.8	0	0.0	0	0
		1962	discontinued							
Ohio ringneck, Reeves cross	Ohio	1960	8	1:2	73	9.1	31	47.0 (1)	28	8
		1961	6	1:2	153	25.8	1	0	0	0
		1962	discontinued							
Reeves, Ohio ringneck hybrid	Ohio	1960	167	1:2-1:5	4117	24.6	1455	38.7 (1)	1088	515
		1961	301	1:2-1:5	9757	32.4	3430	35.0 (1)	1967	1160
		1962	discontinued							
Elliot's pheasant (<u>Syrmaticus</u> <u>elliotti</u>)	Ohio	1960	169 (2)	1:2-1:5	1941	11.4	827	49.2	649	255
		1961	4	1:2	57	14.3	26	57.8	22	8
		1962	2	1:2	31	15.5	14	51.8	9	5
		1963	discontinued							
Himalayan snow cock (<u>Tetraogallus himalayensis</u>)	Nevada	1963	5	1:1	3 (3)	0.6	3	100	1	0

(1) Percentages based on eggs set in incubator, not on eggs laid.

(2) Breeders obtained from private game farms in the United States.

(3) All eggs laid by one hen. Fowl pox outbreak disturbed breeders.

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